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Chinese Agricultural Production and Trade, 1982 and 1983

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An Intelligence Assessment

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This paper was prepared by [redacted]
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Comments and queries are welcome and may be
directed to the Chief, Domestic Policy Branch, on
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Key Judgments

*Information available
as of 15 June 1983
was used in this report.*

China is aiming for 4-percent growth in agricultural production in 1983, a goal we judge to be realistic. Chinese agriculture had another banner year in 1982, with total production up 11 percent and a record grain harvest of 353.4 million tons, a 9-percent increase.

China's superior agricultural performance in recent years can be attributed to favorable weather and new, liberal agricultural policies. Beijing tends to downplay the importance of weather in the gains, but the 1983 crop may provide a measure of the effectiveness of the new policies, as weather is off to an inauspicious start. Hailstorms and cool, wet weather in the south have set back the early rice crop, although the outlook for wheat in the north is still good.

With some minor adjustments to improve crop mix, the liberal policies will continue and in some cases will be expanded. Individuals and collectives have been given greater latitude in producing and marketing their goods in 1983.

Purchases of US agricultural commodities by value declined in 1982 for the second straight year. Part of the decline was a result of a drop in world commodity prices; US grain shipments actually increased. Excellent cotton and soybean harvests allowed China to stop purchases of these goods in 1983.

So far, China has purchased only half of the 6 million tons called for this year under the Chinese-US long-term grain agreement. Beijing has generally adhered to such agreements in the past, and, barring some jolt in the bilateral relationship, we expect China to meet the requirement. China's expansion of its livestock industry may eventually increase demand for US feedgrains.

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Excellent Performance in 1982

Agriculture was the highlight of China's economic performance in 1982. The 11-percent growth in total agricultural production was broad based, with nearly all sectors posting double-digit advances (see table 1). The crop mix improved, and the production of grain, the largest and most critical of commodities, jumped 9 percent even though sown area declined 2 percent.

The Chinese cited the continued expansion last year of the production responsibility system as the major cause of increased production. The system, which began trial implementation in 1978, increases peasant incomes as they increase production. By yearend 1982, over 90 percent of production teams—the basic rural economic units—were practicing some form of the responsibility system. The underpinnings of the system were also strengthened by the dissolution of communes in most areas.

Although the Chinese downplayed weather as a factor in the good performance, we believe growing conditions were favorable and played a major role in boosting 1982 production.

Increased agricultural inputs also contributed to agriculture's success (see table 2). The fertilizer application rate increased by 13 percent in 1982, in part, because availability was increased by larger imports from abroad. The peasant responsibility system, which allows farmers to market increases in production privately, has markedly increased the demand for fertilizer. The production of small tractors still lags behind peasant demand. But the supply of power irrigation equipment, which grew only 2.3 percent, apparently exceeds demand, indicating the peasants have not yet entered the market for personal water-pumping equipment.

The Chinese have not published figures for total private-sector (peasant) investment in agriculture, but we believe that both its magnitude and importance

Table 1

China: Total Value of Agricultural Output

	1982 Value ^a (billion yuan)	Percent Growth From 1981
Total	278.5	11.0
Farm crops	174.7	10.1
Animal husbandry	45.6	13.2
Rural industry	42.1	12.8
Forestry	11.0	8.5
Fishery	5.1	12.1

^a Calculated in 1980 prices.

increased last year. Total state investment in agricultural production last year rose only 4 percent to 7.6 billion yuan. But state loans to individual households practicing the responsibility system jumped 170 percent to 7.9 billion yuan. We assume that a portion of peasants' rising personal income also is being spent on agricultural inputs. Per capita peasant income in 1982 reached 270 yuan, an increase in real income of roughly 15 percent, nearly three times the increase in real incomes for urban dwellers, which rose to 463 yuan.

Grain Crops

China's grain crops totaled 353.4 million tons last year, a jump of 28.4 million tons and the second-largest increase in China's history. Most of the increase came in rice and wheat, with soybeans and miscellaneous grains (mostly corn and millet) suffering from slightly poorer weather than in 1981 (see table 3).

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Table 2
China: Agricultural Inputs

Commodity	Level in 1982	Percent Changes From Previous Year			
		1979	1980	1981	1982
Production					
Chemical fertilizer ^a (million metric tons)	12.78	22.6	15.7	0.0	3.2
Nitrogen (million metric tons)	10.22	15.5	13.3	− 1.3	3.7
Phosphate (million metric tons)	2.54	75.9	26.9	8.7	1.2
Potash (metric tons)	25,000	− 23.8	25.0	27.5	− 3.8
Chemical insecticides (metric tons)	457,000	0.8	0.0	− 9.9	− 5.6
Conventional tractors (units)	40,000	10.5	− 22.2	− 45.9	− 24.5
Hand tractors (units)	298,000	− 1.9	− 31.4	− 8.7	49.7
Gunny bags (million units)	500	18.6	25.9	4.4	16.6
In use					
Conventional tractors (units)	812,000	19.7	11.7	6.3	2.5
Hand tractors (million units)	2.29	21.7	12.2	8.7	12.3
Rural electricity (billion kilowatt-hours)	39.7	11.7	13.5	15.3	7.3
Irrigation pumps (million horsepower)	76.7	8.6	4.8	0.5	2.3
Chemical fertilizer ^a (million metric tons)	15.13	19.0	18.4	5.2	13.4

^a Based on 100-percent effectiveness.

Sichuan Province posted the largest increase, with the total grain harvest rising nearly 3 million tons to over 37 million tons. Heilongjiang's harvest declined for the fourth straight year (see figure 1).

The increased grain harvest was welcome news for Beijing's planners, who had been concerned about declines in the area sown to grain. Coupled with record grain imports, last year's harvest lifted China's per capita grain availability to record levels (see table 4).

Industrial Crops

China continued its phenomenal growth in industrial crop production, which is still benefiting from the large procurement price increases of 1979. Cotton production shot up 21 percent to 3.6 million tons, matching the 1985 production target and making China the world's largest cotton producer (see table 5).

Table 3
China: Grain Production

Million metric tons

	1979	1980	1981	1982
Total grain	332.1	320.5	325.0	353.4
Rice	143.8	139.3	143.2	161.2
Wheat	62.7	54.2	58.5	68.4
Potatoes ^a	28.5	27.8	25.0	26.7
Soybeans	7.5	7.9	9.2	9.0
Miscellaneous	89.7	91.3	89.1	88.1

^a For comparability, tubers are converted to grain by the weight ratio of 5 to 1.

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Figure 1
China: 1982 Grain Harvest



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Boundary representation is not necessarily authoritative.

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Table 4
China's Grain Supply, Production, and Trade

Million metric tons
(except where noted)

Year	Per Capita Availability (kilograms)	Total Supply ^a	Production	Trade		
				Net Imports	Imports ^b	Exports
1957	295	189.4	190.7	-1.34	0.14	1.48
1965	271	199.0	194.5	4.50	6.02	1.52
1970	288	243.1	240.0	3.11	4.63	1.52
1975	302	286.0	284.5	1.54	3.50	1.96
1976	298	287.0	286.3	0.69	2.09	1.40
1977	296	288.9	282.7	6.22	7.30	1.08
1978	316	313.0	304.8	8.15	9.55	1.40
1979	341	342.1	332.1	10.04	11.42	1.38
1980	328	333.8	320.5	13.29	14.48	1.19
1981	328	338.2	325.0	13.15	13.95	0.80
1982	351	367.6	353.4	14.20	15.30	1.10

^a Assuming no change in grain stocks.

^b Includes soybean, for consumption comparisons.

The area sown to cotton increased 533,000 hectares, or roughly 10 percent. All of this expansion came in the North China Plain as southern provinces followed plans to reduce cotton hectareage. Sichuan's cotton area, for example, fell 60 percent last year. Expanded hectareage and favorable weather brought record yields in northern provinces, however, where Shangdong, Hebei, Shanxi, and Shaanxi all increased production from 40 to 60 percent. The excellent production, rapidly increasing use of blended fabrics, and softening demand for textile exports led the Chinese to announce last year that they no longer need to import cotton and would begin small exports of their domestic crop. []

Oilseed production continued its double-digit growth for the fifth straight year and surpassed the 1985 goal of 10.5 million tons. The expanded area sown to rapeseed and the good weather were responsible for nearly all of the increase (see table 6). Flooding in the main sesame-growing provinces of Henan and Hubei and dry weather in the peanut-growing area of Shandong limited production of those oilseeds. Oil from

cottonseed, which is not included in Chinese edible-oil statistics, increased as a result of an excellent cotton harvest. Soybean production held steady at about 9 million tons and continued to obviate the need for purchases of US soybean oil. []

Livestock and Fishery Production

The livestock industry is continuing the expansion begun in 1979 when Beijing targeted it as one of the key areas for agricultural growth (see table 7). Its development may eventually have a direct impact on Sino-US trade because of the possibility of increasing Chinese imports of feedgrains as well as the Chinese desire to export pork to the United States. []

Since 1978 the growth in the livestock industry has been attributable to three factors: a loosening of state controls on production, increased state investment, and improvements in grain availability (see table 4). []

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Table 5
Production of Selected Agricultural Products

	Amount					Average Annual Increase (percent change from previous year) ^a				
	1957	1979	1980	1981	1982	1958-78	1979	1980	1981	1982
Grain (million metric tons) ^b	190.7	332.1	320.5	325.0	353.4	2.1	9.0	-3.5	1.4	8.7
Cotton (million metric tons)	1.6	2.2	2.7	3.0	3.6	1.3	1.8	22.7	9.6	21.3
Oil-bearing crops (million metric tons)	4.2	6.4	7.7	10.2	11.8	1.0	23.3	19.5	32.7	15.8
Sugarcane (million metric tons)	10.4	21.5	22.8	29.7	36.9	3.4	1.9	6.0	30.1	24.3
Sugar beets (million metric tons)	1.5	3.1	6.3	6.4	6.7	2.8	15.0	103.0	0.9	5.5
Jute, ambar hemp (million metric tons)	0.3	1.1	1.1	1.3	1.1	6.3	0.1	0.8	14.8	-15.9
Silk cocoons (thousand metric tons)	112.5	271.0	326.0	311.0	314.0	3.4	18.9	20.3	-4.6	1.0
Tea (thousand metric tons)	111.5	277.0	304.0	343.0	397.0	4.3	3.4	9.7	12.8	16.0
Aquatic products (million metric tons)	3.1	4.3	4.5	4.6	5.2	1.9	-7.5	4.5	2.4	11.9
Hogs (million head at yearend)	127.8	319.7	305.4	293.7	300.8	4.2	6.1	-4.5	-3.8	2.4
Sheep and goats (million head at yearend)	98.6	183.1	187.3	187.7	181.8	2.6	7.8	2.3	0.2	-3.2
Large animals (million head at yearend)	83.5	94.6	95.2	97.6	101.1	0.6	0.7	0.7	2.5	3.6
Gross value of agricultural output (billion 1970 yuan)	79.3	158.4	162.7	172.0	190.9	2.9	8.6	2.7	5.7	11.0

^a Based on unrounded numbers.

^b Includes potatoes converted on a grain equivalent basis of 5 to 1.

The policy changes for livestock, which closely parallel those for crop production, attempt to link peasant income more closely to livestock productivity. Private ownership of livestock has been initiated, and many state-owned herds have been either sold to individuals or assigned to peasants who contract with the state for their care. By the end of 1982, over 90 percent of hogs and 50 percent of sheep and goats were being raised by peasant families. The expanding rural free markets

allow peasants to sell their animals or any above-quota meat from state animals under their care. A readjustment of state accounting procedures, with emphasis on reporting animal productivity rather than simply herd size, has also fostered more concern for the quality, sex, age, and slaughter weight of animals.

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Oil Crop Production

	Production (thousand metric tons)		Percent Change From Previous Year	
	1981	1982	1981	1982
Total oil crops	10,205	11,817	32.7	15.8
Of which:				
Rapeseed	4,065	5,656	70.5	39.2
Peanuts	3,826	3,916	6.3	2.4
Sesame	510	342	96.9	-32.9

The number of live hogs last year increased for the first time since 1979. During 1980 and 1981 the new policies and rising incomes encouraged a higher slaughter rate, and last year Beijing began providing additional incentives for owning hogs in order to increase herd size. []

Trade

China's purchases of US agricultural commodities declined for the second straight year, with only corn and timber showing increased sales over 1981 (see table 8). Part of the decline is attributable to decreases in world commodity prices, however, as US grain shipments actually increased in volume to 8.5 million tons. The United States remains China's largest single source of grain (see figure 2). []

Canada signed a new long-term grain agreement with China, which began in August 1982 and runs through July 1985. The new agreement increases required grain sales from a range of 2.8-3.5 million tons to 3.5-4.2 million tons. Sales under the new agreement resulted in record Canadian shipments for calendar year 1982. France also shipped record levels during 1982 because of special EC subsidies given to China. []

Prospects for 1983

China has announced plans to increase agricultural production by a moderate 4 percent this year. Targets for individual commodities have not been published since late last year because 1982 production surpassed the original 1983 targets for grain and cotton. Beijing apparently hopes to achieve this growth with a minimum of state investment, as only a 1.3-percent increase is budgeted this year for agricultural support. As was the case in 1982, we expect peasant investment in agriculture to continue to increase. Individual peasants borrowed 6.7 billion yuan in the first quarter of the year—more than double the level for the same period in 1982. []

Grain Crops

With harvest now under way, winter wheat regions have had more favorable weather than last year, when total wheat output reached a record 68.4 million tons. With a slightly expanded sown area this year, we believe the total wheat harvest could easily reach 75 million tons. Weather thus far has been less favorable in south China, however, where we believe unusually cool, wet weather and hailstorms have lowered the output of early rice. []

Policies

To improve the crop mix—in particular, to limit further increases in production of high-profit, non-grain crops—Beijing appears to be continuing to adjust commodities on an individual basis. In response to the excellent oilseed harvest of 1981, for example, Beijing adjusted procurement regulations for oilseeds, making them less profitable. This, we believe, caused the shift in sown area last fall from rapeseed to wheat. []

Adjustments have also been made for the production of tobacco, which most clearly illustrates Beijing's problems in balancing production. A 20-percent increase in tobacco procurement prices in 1981 boosted

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Table 7
China's Fishery and Livestock Production ^a

	1979	1980	1981	1982	Change From Previous Year			
	1979	1980	1981	1982	1979	1980	1981	1982
	<i>Thousand metric tons</i>				<i>Percent</i>			
Total aquatic products	4,305	4,497	4,605	5,155	-7.5	4.5	2.4	11.9
Freshwater products	1,116	1,238	1,372	1,559	5.5	11.1	10.8	13.6
Marine products	3,189	3,259	3,233	3,596	11.3	2.1	-0.8	11.2
Total livestock products	10,620	12,055	12,609	13,508	30.1	13.5	4.6	7.1
Pork	10,010	11,341	11,884	12,718	NA	13.3	4.8	7.0
Beef	230	269	249	266	NA	17.0	-7.4	6.9
Mutton	380	445	476	524	NA	17.1	7.0	10.1
	<i>Thousand head ^b</i>							
Total livestock	597,440	587,988	579,073	583,700	44.0	-1.6	-1.5	0.8
Hogs	319,710	305,431	293,702	300,780	6.1	-4.5	-3.8	2.4
Large animals	94,590	95,246	97,641	101,130	0.7	0.7	2.5	3.6
Sheep and goats	183,140	187,311	187,730	181,790	7.8	2.3	0.2	-3.2

^a Totals may not add because of rounding.^b Yearend data.

Table 8
Imports of US Agricultural Commodities

Million US \$

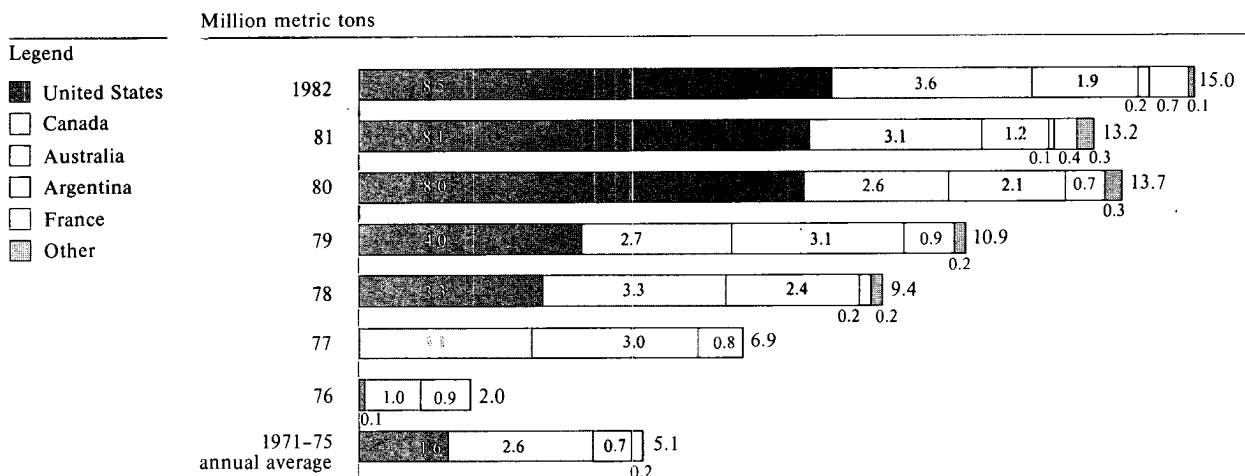
	1978	1979	1980	1981	1982
Total	577	995	2,320	2,124	1,742
Wheat	250	214	1,039	1,269	1,047
Corn	112	269	225	62	189
Soybeans	15	107	155	130	63
Soybean oil	26	36	56	17	0
Cotton	157	357	701	464	178
Timber and pulp	4	4	110	168	237
Other	13	8	34	14	28

production over 50 percent last year to 1.8 million tons. This surpassed the 1985 target of 1.3 million tons and was more than 700,000 tons above China's consumption and export requirements. This year Beijing is attempting to limit production by restricting sown area, lowering procurement prices, canceling price subsidies and awards, and implementing seasonal price differences. Henan Province has even announced that peasants there growing more than their quota of tobacco will not be supplied with fertilizer and coal and "will be deprived of their right to enjoy rewards."

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Figure 2
China: Imports of Grain, by Source



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An increasing number of articles and editorials on the state-run commodity marketing system indicate that it is being readjusted. The changes will apparently give more latitude for individuals and collectives to transport and market goods, thus further expanding China's private sector. The state will, however, still control the most important commodities, such as grain and cotton.

Trade

The impact a growing number of bilateral irritants—textiles, technology transfer, a tennis player, and Taiwan, for example—will have on Sino-US agricultural trade is hard to predict. Beijing's increasing tendency, however, to hint at a relationship between future commodity purchases and the state of political ties has introduced an element of uncertainty.¹ Early in the year, Beijing announced the cancellation of all purchases of US cotton and soybeans in retaliation for US restrictions on imports of Chinese textiles. It was

also widely publicized that the slowdown in purchases of US timber products was the result of political differences. As mentioned earlier, however, China has had record domestic harvests of cotton and soybeans and had already lowered purchases of these commodities to insignificant levels before announcing the bans. The Chinese subsequently resumed timber purchases.

The largest unresolved question in 1983 agricultural trade is the level of Chinese grain purchases. Beijing has not made sizable purchases of US grain since early in the year, and commitments for 1983 total only half of the 6-million-ton minimum called for in the long-term grain agreement. Cheaper supplies from other exporters have allowed China to bypass

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the US market. Nevertheless, Beijing has fulfilled its agreements in the past, and, barring new strains in bilateral relations, we expect the Chinese to enter the US grain market before yearend and meet the 6-million-ton minimum. [REDACTED]

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Shipments from all of China's other grain suppliers should increase this year with the exception of Australia, where drought has limited grain supplies. Most of the increase in sales this year will come from Argentina and France, which together could increase sales by 3 million tons. France's long-term grain agreement with China expired in May 1983 [REDACTED]

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Canada will also ship record levels of grain this year, probably totaling slightly over 4 million tons. [REDACTED]

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